

**REMARKS**

Claims 1, 6, and 10 are currently being amended, and claim 2 is currently being cancelled. These amendments do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, the Examiner is respectfully requested to enter these amendments.

**1. Claim Objections**

The Office Action states,

Claim 1 is objected to because of the following informalities: the abbreviation MFR<sub>190/21.6</sub> is used in line 3, but is never defined in the claim or the original specification. Appropriate correction is required.

**RESPONSE**

Applicant respectfully traverses the objection to claim 1. In particular, Applicant's specification states on page 3, lines 11-14,

**The polymer composition of the invention also has a melt flow index ISO 1133 in the range of from 1.5 to 3.5 dg/min expressed in terms of MFR<sub>190/21.6</sub>, and a viscosity number VN<sub>tot</sub> in the range of from 500 to 600 cm<sup>3</sup>/g measured according to ISO/R 1191 in decalin at 135°C. (Emphasis added)**

Additionally, ISO 1133:2005, which replaced ISO 1133 in 2005, clearly indicates the nomenclature used by Applicant is well within the purview of one skilled in the art, and corresponds to a test temperature of 190°C and a nominal load of 21.6 kilograms. See ISO 1133:2005, in particular, Annex A, Table A.1. A copy of ISO 1133:2005 is attached as ATTACHMENT B. Accordingly, Applicant respectfully believes one of ordinary skill in the art would

appreciate the meaning of the nomenclature used by Applicant in the currently pending claims and specification. As such, Applicant respectfully believes the current objection should be withdrawn.

## **2. Rejection of Claims 1 and 3-5 Under 35 U.S.C. §102(b)**

The Office Action states,

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Moriguchi et al. (US Pat. 4,536,550).

Considering Claim 1: Moriguchi et al. teaches a polyethylene composition with multimodal molecular mass distribution, with a density of from 0.950 to 0.956 g/cm<sup>3</sup> (9:66-10:1) and MFR in the range of 1.5 to 3.5 dg/min (10:3-5) and which comprises 35 to 45% by weight (2:13-16) of a low molecular mass (2:59-60) polyethylene polymer A (2:52-56); from 34 to 44% by weight (2:13-16) of a high molecular mass (3:28-29) copolymer B made from ethylene and a first 1-olefin comonomer having from 4 to 8 carbons (2:52-58); and from 18 to 26% by weight of an ultrahigh molecular mass (3:8-10) copolymer C containing a second 1-olefin comonomer (2:52-58).

Considering Claim 3: Moriguchi et al. teaches the 1-olefin comonomers as being 1-butene, 1-hexene, 1-pentene, 1-octene or 4-methyl-1-pentene (2:56-58).

Considering Claim 4: Moriguchi et al. teaches the composition of claim 1. Therefore it would inherently have the same properties as the instant composition, namely a viscosity number of from 500 to 600 cm<sup>3</sup>/g. See MPEP §2112.

Considering Claim 5: Moriguchi et al. teaches an impact strength in the range of 60 to 90 kJ/m<sup>2</sup> (Table 3). In

addition, Moriguchi et al. teaches the composition of claim 1. Therefore it would inherently have the same properties as the instant composition, namely a swell ratio in the range of 180 to 220% and a stress crack resistance in the range of 15 to 25 hours. See MPEP §2112.

### **RESPONSE**

Applicant respectfully traverses the rejection of claims 1 and 3-5.

First and foremost, Applicant has amended claim 1 to incorporate claim 2 therein. Accordingly, for this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

#### *Anticipation:*

Notwithstanding the above, for a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). Additionally, the reference must, "sufficiently describe the claimed invention to have placed the

public in possession of it." *Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1572, 24 U.S.P.Q.2d 1321, 1332 (Fed. Cir. 1992).

With respect to the current rejection, Applicant respectfully believes U.S. Patent 4,536,550 (herein referred to as "Moriguchi, et al.") fails to disclose, teach, or suggest Applicant's currently claimed polyethylene compositions comprising a multimodal molecular mass distribution, which has a density in the range of from 0.950 to 0.956 g/cm<sup>3</sup> at 23 °C, an MFR<sub>190/21.6</sub> in the range of from 1.5 to 3.5 dg/min and which comprises from 35 to 45 % by weight of a low-molecular-mass ethylene homopolymer A; from 34 to 44 % by weight of a high-molecular-mass copolymer B made from ethylene and less than 0.1% by weight of a first 1-olefin comonomer having from 4 to 8 carbon atoms, based on the weight of copolymer B; and from 18 to 26 % by weight of an ultrahigh-molecular-mass ethylene copolymer C containing from 0.1 to 0.6% by weight of a second 1-olefin comonomer, based on the weight of copolymer C, wherein the percentage data of homopolymer A, copolymer B, copolymer C are based on the total weight of the polyethylene composition.

In light of the above, Applicant respectfully believes claims 1, and 3-5 are patentably distinguishable over the Moriguchi, et al. Accordingly, Applicant respectfully requests the Examiner to withdraw the current rejection, and allow claims 1 and 3-5.

**3. Rejection of Claims 1-5 Under 35 U.S.C. 102(e)**

The Office Action states,

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Berthold et al. (US Pat. 6,713,561).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention 'by another,' or by an appropriate showing under 37 CFR 1.131.

Considering Claim 1: Berthold et al. teaches a polyethylene composition with multimodal molecular mass distribution (1:11-13) which has a density in the range of from 0.920 to 0.956 at 23 °C (2:28-30) an MFR in the range of from 1.5 to 3.5 dg/min (Table 1) and which comprises from 35 to 45% by weight of a low-molecular-mass ethylene homopolymer (2:14-17); from 34 to 44% by weight of a high-molecular-mass copolymer made from ethylene and a 1-olefin comonomer having from 4 to 8 carbon atoms (2:17-19); and from 18 to 26% by weight of ultrahigh-molecular-mass ethylene copolymer C containing a second 1-olefin comonomer (2:19-21).

Considering Claim 2: Berthold et al. teaches the first 1-olefin comonomer as being present at less than 0.1% by weight (2:30-34) and the second 1-olefin as being present in an amount 0 to 10% by weight (2:35-39).

Considering Claim 3: Berthold et al. teaches the 1-olefins as being 1-butene, 1-hexene, 1-pentene, 1-octene or 4-methyl-1-pentene (2:34-35).

Considering Claim 4: Berthold et al. teaches the viscosity number as being from 500 to 600 cm<sup>3</sup>/g (2:40-46).

Considering Claim 5: Berthold et al. teaches the swell ratio as being from 180 to 220% (Table 1), and the stress-crack resistance as being in the range of 15 to 25 hours (Table 1). In addition, Berthold et al. teaches the composition of claim 1. Therefore it would inherently have the same properties as the instant composition, namely the

notched impact strength as being in the range from 60 to 90 kJ/m<sup>2</sup>. See MPEP §2112.

### **RESPONSE**

Claim 2 has been cancelled rendering the rejection thereof moot. Notwithstanding, Applicant respectfully traverses the rejection of claims 1 and 3-5.

#### *Anticipation:*

For a reference to anticipate an invention, all of the elements of that invention must be present in the reference. The test for anticipation under section 102 is whether each and every element as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). Additionally, the reference must, "sufficiently describe the claimed invention to have placed the public in possession of it." *Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1572, 24 U.S.P.Q.2d 1321, 1332 (Fed. Cir. 1992).

Accordingly, Applicant respectfully believes U.S. Patent 6,713,561 to Berthold, et al. (herein referred to as "Berthold, et al.") fails to disclose, teach, or suggest, "A polyethylene

composition with multimodal molecular mass distribution, which has a density in the range of from 0.950 to 0.956 g/cm<sup>3</sup> at 23 °C, an MFR<sub>190/21.6</sub> in the range of from 1.5 to 3.5 dg/min and which comprises from 35 to 45 % by weight of a low-molecular-mass ethylene homopolymer A; from 34 to 44 % by weight of a high-molecular-mass copolymer B made from ethylene and less than 0.1% by weight of a first 1-olefin comonomer having from 4 to 8 carbon atoms, based on the weight of copolymer B; and from 18 to 26 % by weight of an ultrahigh-molecular-mass ethylene copolymer C containing from 0.1 to 0.6% by weight of a second 1-olefin comonomer, based on the weight of copolymer C, wherein the percentage data of homopolymer A, copolymer B, copolymer C are based on the total weight of the polyethylene composition."

First and foremost, Applicant respectfully believes the Examiner has not outlined where Berthold, et al. discloses, teaches, or suggests, with sufficient specificity to constitute an anticipation under the statue, Applicant's currently claimed polyethylene composition comprising:

- (i) a multimodal molecular mass distribution;
- (ii) a density in the range of from 0.950 to 0.956 g/cm<sup>3</sup> at 23 °C;
- (iii) a MFR<sub>190/21.6</sub> in the range from 1.5 to 3.5 dg/min;
- (iv) 35 to 45 % by weight of a low-molecular-mass ethylene homopolymer A;
- (v) 34 to 44 % by weight of a high-molecular-mass copolymer B

made from ethylene and less than 0.1% by weight of a first 1-olefin comonomer having from 4 to 8 carbon atoms; and

(vi) 18 to 26 % by weight of an ultrahigh-molecular-mass ethylene copolymer C containing from 0.1 to 0.6% by weight of a second 1-olefin comonomer.

In particular, the current Office Action merely states on page 4, lines 7-14,

Considering Claim 1: Berthold et al. teaches a polyethylene composition with multimodal molecular mass distribution (1:11-13) which as a density in the range of from 0.920 to 0.956 at 23 °C (2:28-30) an MFR in the range of from 1.5 to 3.5 dg/min (Table 1) and which comprises from 35 to 45% by weight of a low-molecular-mass ethylene homopolymer (2:14-17); from 34 to 44% by weight of a high-molecular-mass copolymer made from ethylene and a 1-olefin comonomer having from 4 to 8 carbon atoms (2:17-19); and from 18 to 26% by weight of ultrahigh-molecular-mass ethylene compolymer C contating a second 1-olefin comonomer (2:19-21).

However, Applicant respectfully notes Berthold, et al. discloses a broad range for each component, namely 30 to 60% by weight of a low-molecular weight ethylene homopolymer as component (A), 30 to 65% by weight of a high-molecular weight ethylene copolymer as component (B), and 1 to 30% by weight of an ultrahigh-molecular weight ethylene homopolymer or copolymer as component (C). See col. 2, lines 13-22 of Berthold, et al. Alternatively, Applicant's currently claimed polyethylene compositions comprise from 35 to 45% by weight of a low-molecular mass ethylene homopolymer as component (A), from 34 to 44% by weight of a high-molecular mass ethylene copolymer comprising less than 0.1% by



weight of a first 1-olefin comprising from 4 to 8 carbon atoms as component (B), and from 18 to 26% by weight of an ultrahigh-molecular mass ethylene copolymer comprising from 0.1 to 0.6% by weight of a second 1-olefin comonomer.

Accordingly, Applicant respectfully believes Berthold, et al. does not disclose Applicant's currently claimed polyethylene compositions with sufficient specificity to constitute an anticipation under the statute. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). Additionally, the reference must, "sufficiently describe the claimed invention to have placed the public in possession of it." *Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1572, 24 U.S.P.Q.2d 1321, 1332 (Fed. Cir. 1992). Additionally, see MPEP §2131.03, II.

As such, for this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding, Applicant has unexpectedly found Applicant's currently claimed polyethylene compositions comprise an unexpected balance of properties, including, but not limited to, increased toughness. See page 2, lines 9-25 of Applicant's specification.

In light of the above, claims 1 and 3-5 are therefore believed to be patentable over Berthold, et al. Therefore, allowance of the

claims is earnestly requested.

**4. Rejection of Claims 1-5 Under 35 U.S.C. 102(e)**

The Office Action states,

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Berthold et al. (WO 01/23446). Note: US Pat. 6,713,561 is being used as an English language equivalent of WO 01/23446 and all references will be to this document.

Considering Claim 1: Berthold et al. teaches a polyethylene composition with multimodal molecular mass distribution (1:11-13) which has a density in the range of from 0.920 to 0.956 at 23 °C (2:28-30) an MFR in the range of from 1.5 to 3.5 dg/min (Table 1) and which comprises from 35 to 45% by weight of a low-molecular-mass ethylene homopolymer (2:14-17); from 34 to 44% by weight of a high-molecular-mass copolymer made from ethylene and a 1-olefin comonomer having from 4 to 8 carbon atoms (2:17-19); and from 18 to 26% by weight of ultrahigh-molecular-mass ethylene copolymer C containing a second 1-olefin comonomer (2:19-21).

Considering Claim 2: Berthold et al. teaches the first 1-olefin comonomer as being present at less than 0.1% by weight (2:30-34) and the second 1-olefin as being present in an amount 0 to 10% by weight (2:35-39).

Considering Claim 3: Berthold et al. teaches the 1-olefins as being 1-butene, 1-hexene, 1-pentene, 1-octene or 4-methyl-1-pentene (2:34-35).

Considering Claim 4: Berthold et al. teaches the viscosity number as being from 500 to 600 cm<sup>3</sup>/g (2:40-46).

Considering Claim 5: Berthold et al. teaches the swell ratio as being from 180 to 220% (Table 1), and the stress-crack resistance as being in the range of 15 to 25 hours (Table 1). In addition, Berthold et al. teaches the composition of claim 1. Therefore it would inherently have the same properties as the instant composition, namely the notched impact strength as being in the range from 60 to 90 kJ/m<sup>2</sup>. See MPEP §2112.

**RESPONSE**

Claim 2 has been cancelled rendering the rejection thereof moot. Notwithstanding, Applicant respectfully traverses the rejection of claims 1 and 3-5.

Arguments regarding Berthold, et al. *supra* are incorporated herein by reference in their entirety. Since U.S. Patent 6,713,561 (i.e., Berthold, et al.) is derived from International Application PCT/EP00/08817, which was published as WO 01/23446 (herein referred to as "Berthold, et al. II"), Applicant respectfully believes the current rejection should be withdrawn for the same reasons outlined above in paragraph 3.

In light of the above, claims 1 and 3-5 are therefore believed to be patentable over Berthold, et al. II. Therefore, allowance of the claims is earnestly requested.

**5. Rejection of Claim 2 Under 35 U.S.C. 103(a)**

The Office Action states,

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moriguchi et al. (US Pat. 4,536,550) as applied to claim 1 above, and further in view of DeChellis et al. (US Pat. 5,405,922).

Considering Claim 2: Moriguchi et al. teaches the composition of claim 1.

Moriguchi et al. does not teach the co-monomers being used in the claimed ratio. However, DeChellis et al. teaches using an alpha-olefin co-monomer in an amount less than 0.1% and in an amount between 0.1 to 0.6% by weight (5:39-53). Moriguchi et al. and DeChellis et al.

are combinable as they are concerned with the same field of endeavor, namely ethylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used the alpha-olefins in the amount prescribed by DeChellis et al. in the composition of Moriguchi et al., and the motivation to do so would have been, as DeChellis et al. suggest, to control the density of the ethylene copolymer (5:45-53).

### **RESPONSE**

Claim 2 has been cancelled rendering the above rejection moot. Notwithstanding, Applicant respectfully traverses the Examiner's rejection.

#### *Obviousness:*

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP

\$2142.

First and foremost, Applicant respectfully believes the Examiner has not established a *prima facie* case of obviousness, as required *supra*. In particular, Moriguchi, et al. relates to compositions produced by using **Ziegler-type catalysts**. See col. 4, line 32 - col. 5, line 23. However, DeChellis, et al. clearly discloses in col. 2, lines 30-34, and col. 3, line 7-10,

This invention relates to a continuous gas phase polymerization process for polymerizing alpha-olefins utilizing **a bulky ligand transition metal catalyst**, for example **a metallocene**, in a gas phase fluidized bed reactor operating in a condensed mode. (Emphasis added)

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This invention relates to the gas phase polymerization process for polymerizing olefins utilizing **a metallocene** in a gas phase fluidized bed polymerization reactor operating in a condensed mode. (Emphasis added)

Additionally, DeChellis, et al. discloses in col. 1, lines 58-68, and col. 2, lines 13-19,

The catalyst system described in Jenkins, III et al. is **a TiCl<sub>3</sub> based traditional Ziegler-Natta catalyst system**. Using this catalyst system in a condensed mode operation results inevitably in a process and product constraints as will become apparent later in this specification. The process limitations limit production rates and significantly increase the cost of producing polymers. Also, as a direct consequence of using these traditional catalysts in this process the polymers available for production are restricted to certain densities and melt indices. (Emphasis added)

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Traditional catalyst systems and polymers produced therewith restrict these values, and as a direct

consequence of this, drastically reduce production rates achievable for any given polymer being produced. **Furthermore, these traditional catalysts and catalyst systems limit the type and characteristics of the polymer.** (Emphasis added)

Accordingly, DeChellis, et al. clearly discloses the process therein requires the use of metallocene catalyst systems, and that traditional, Ziegler-Natta catalyst systems do not produce compositions having the proper characteristics. As such, Applicant respectfully traverses the Examiner's contention on page 6, lines 15-21, which states,

Moriguchi et al. and DeChellis et al. are combinable as they are concerned with the same field of endeavor, namely ethylene copolymers. It would have been obvious to a person having ordinary skill in the art at the time the invention to have used the alpha-olefins in the amount prescribed by DeChellis et al. in the composition of Moriguchi et al., and the motivation to do so would have been, as DeChellis et al. suggest, to control the density of the ethylene copolymer (5:45-53).

However, DeChellis, et al. clearly teaches away from using traditional, Zeigler-Natta catalyst systems, and that the process and resultant polymer characteristics produced therein result directly from using metallocene catalysts. Accordingly, Applicant respectfully believes one skilled in the art would not have modified Moriguchi, et al. as suggested by the Examiner given DeChellis, et al. expressly teaches away from such modification. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220

USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Additionally, see MPEP §2141.02 VI, and §2145 XD.

Accordingly, for this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding, Applicant respectfully notes the Examiner refers to col. 5, lines 45-53 of DeChellis to support the current rejection. In particular, the aforementioned highlighted sections of DeChellis, et al. discloses,

For the preferred alpha-olefin monomer ethylene, depending on the catalyst, the  $C_x/C_2$  ratios are preferably less than about 0.2, and more preferably less than about 0.1 and as low as about 0.002 to provide a polymer having a density in the range of from about 0.86 g/cm<sup>3</sup> to about 0.96 g/cm<sup>3</sup>, preferably about 0.88 g/cm<sup>3</sup> to about 0.94 g/cm<sup>3</sup> and most preferably between about 0.90 g/cm<sup>3</sup> to about 0.935 g/cm<sup>3</sup>.

However, as outlined above, the passage highlighted by the Examiner hinges on the fact that DeChellis, et al. discloses the compositions are produced with metallocene catalysts, and that the characteristics of the resultant polymer produced are necessarily derived from the metallocene catalyst systems. Nevertheless, the passage also only relates to the comonomer content of **a single** ethylene copolymer composition. However, Applicant is currently claiming polyethylene compositions comprising **three components**, namely: (i) 35 to 45% of a low-molecular-mass ethylene homopolymer

A; (ii) 34 to 44% of a high-molecular-mass ethylene copolymer B, comprising a C<sub>4</sub>-C<sub>8</sub> comonomer content of less than 0.1%; and (iii) 18 to 26% of an ultrahigh-molecular-mass ethylene copolymer C, comprising from 0.1 to 0.6% by weight of comonomer. In this regard, Applicant respectfully believes the Examiner has not addressed this factual discrepancy. Accordingly, Applicant respectfully believes the current rejection should be withdrawn.

Albeit, if the Examiner maintains the current rejection, Applicant respectfully requests the Examiner to address the factual discrepancies outlined above, and outline **why**, with factual, objective evidence, one would have modified the express disclosure of Moriguchi, et.al. and DeChellis, et al., especially given their express disclosure against such modification.

In light of the above, Applicant respectfully believes claim 1 and 3-5 are patentable over Moriguchi, et al. in view of DeChellis, et al. Therefore, allowance of the claims is earnestly requested.

#### **6. Double Patenting**

The Office Action states,

Claims 1-5 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, and 5-8 of U.S. Patent No. 6,713,561. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Considering Claim 1: Patent '561 teaches a polyethylene composition with multimodal molecular mass distribution which as a density in the range of from 0.920 to 0.956 at 23 °C an MFR in the range of from 1.5 to 3.5 dg/min and which comprises from 35 to 45% by weight of a low-



molecular-mass ethylene homopolymer; from 34 to 44% by weight of a high-molecular-mass copolymer made from ethylene and a 1-olefin comonomer having from 4 to 8 carbon atoms; and from 18 to 26% by weight of ultrahigh-molecular-mass ethylene copolymer C containing a second 1-olefin comonomer (Claim 1).

Considering Claim 2: Patent '561 teaches the first 1-olefin comonomer as being present at less than 0.1% by weight (claim 6) and the second 1-olefin as being present in an amount 0 to 10% by weight (claim 7).

Considering Claim 3: Patent '561 teaches the 1-olefins as being 1-butene, 1-hexene, 1-pentene, 1-octene or 4-methyl-1-pentene (claim 7).

Considering Claim 4: Patent '561 teaches the viscosity number as being from 500 to 600 cm<sup>3</sup>/g (claim 8).

Considering Claim 5: Patent '561 teaches the composition of claim 1. Therefore it would inherently have the same properties as the instant composition, namely the the swell ratio as being from 180 to 220%, the notched impact strength as being in the range from 60 to 90 kJ/m<sup>2</sup> and the stress-crack resistance as being in the range of 15 to 25 hours. See MPEP §2112.

### **RESPONSE**

Claim 2 has been cancelled rendering the rejection thereof moot. Notwithstanding, Applicant respectfully traverses the rejection of claims 1 and 3-5. All arguments regarding Berthold, et al. *supra* are incorporated herein by reference in their entirety.

#### *Non-statutory, Obviousness-type Double Patenting:*

The doctrine of double patenting seeks to prevent the unjustified extension of patent exclusivity beyond the term of a patent. The public policy behind this doctrine is that:

The public should. . . be able to act on the assumption

that upon the expiration of the patent it will be free to use not only the invention claimed in the patent but also modifications or variants which would have been obvious to those of ordinary skill in the art at the time the invention was made, taking into account the skill in the art and prior art other than the invention claim in the issued patent.

*In re Zickendraht*, 319 F.2d 225, 232, 138 USPQ 22, 27 (CCPA 1963) (Rich, J., concurring).

In determining whether basis for an obviousness-type double patenting rejection exists, the analysis employed parallels the guidelines for a 35 U.S.C. 103(a) rejection. In particular, the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), are applied for establishing a background for determining obviousness under 35 U.S.C. 103, and are then applied for determining an obvious-type double patenting analysis. These factual inquiries are summarized as follows:

- (A) Determine the scope and content of a patent claim relative to a claim in the application at issue;
- (B) Determine the differences between the scope and content of the patent claim as determined in (A) and the claim in the application at issue;
- (C) Determine the level of ordinary skill in the pertinent art; and
- (D) Evaluate any objective indicia of nonobviousness.

The conclusion of obviousness-type double patenting is made in light of these factual determinations.

Additionally, any obviousness-type double patenting rejection should make clear:

- (A) The differences between the inventions defined by the conflicting claims - a claim in the patent compared to a claim in the application; and
- (B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue is anticipated by, or would have been an obvious variation of, the invention defined in a claim in the patent.

Moreover, when considering whether the inventive subject matter defined in a claim of an application would have been an obvious variation of the inventive subject matter defined in the claim of a patent, **the disclosure of the patent may not be used as prior art.** *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1279, 23 USPQ2d 1839, 1846 (Fed. Cir. 1992), (Emphasis added).

With respect to the current rejection, currently pending claims 1 and 3-5 are directed towards a polyethylene composition. All currently pending and withdrawn claims (i.e., claims 1 and 3-10) are submitted herewith as ATTACHMENT A.

With respect to U.S. Patent 6,713,561 (herein referred to as "Berthold, et al."), claims 1-2 and 5-9 are directed towards a molding compound; claims 3-4 are directed towards a method for producing a polyethylene compound; claims 10-11 are directed towards an article; and claim 12 is directed towards a process to make an

article. Claims 1-12 of Berthold, et al. are attached herewith as ATTACHMENT C.

Currently pending claims 1-5:

Claim 1 of the current application recites,

A polyethylene composition with multimodal molecular mass distribution, which has a density in the range of from 0.950 to 0.956 g/cm<sup>3</sup> at 23 °C, an MFR<sub>190/21.6</sub> in the range of from 1.5 to 3.5 dg/min and which comprises from 35 to 45 % by weight of a low-molecular-mass ethylene homopolymer A; from 34 to 44 % by weight of a high-molecular-mass copolymer B made from ethylene and less than 0.1% by weight of a first 1-olefin comonomer having from 4 to 8 carbon atoms, based on the weight of copolymer B; and from 18 to 26 % by weight of an ultrahigh-molecular-mass ethylene copolymer C containing from 0.1 to 0.6% by weight of a second 1-olefin comonomer, based on the weight of copolymer C, wherein the percentage data of homopolymer A, copolymer B, copolymer C are based on the total weight of the polyethylene composition.

Applicant respectfully believes none of claims 1-12 in Berthold, et al. recite the same, or an obvious variant, of currently pending claim 1. Additionally, currently pending claims 3-5 depend directly or indirectly from currently pending claim 1, and necessarily include all of the limitations therein.

As such, Applicant believes claims 1 and 3-5 are patentably distinct from claims 1-12 in Berthold, et al.

Moreover, Applicant respectfully traverses the current rejection since the Examiner has not made clear: (A) **the differences between the inventive subject matter** defined by the conflicting claims; and (B) the reasons **why** a person of ordinary skill in the

art would conclude that the inventive subject matter defined in the claim at issue is anticipated by, or would have been an obvious variation of, the inventive subject matter defined in a claim in the patent. See MPEP §804 (1).

Additionally, the Examiner states,

Considering Claim 5: Patent '561 teaches the composition of claim 1. Therefore it would inherently have the same properties as the instant composition, namely the swell ratio as being from 180 to 220%, the notched impact strength as being in the range from 60 to 90 kJ/m<sup>2</sup> and the stress-crack resistance as being in the range of 15 to 25 hours. **See MPEP §2112.** (Emphasis added)

However, MPEP §2112 relates to a rejection under 35 U.S.C. §102 or §103 based on inherency in which the disclosure is used to reject the claims for novelty or obviousness. However, when determining whether the inventive subject matter defined in a claim of an application would have been an obvious variation of the inventive subject matter defined in the claim of a patent, **the disclosure of the patent may not be used as prior art.** *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1279, 23 USPQ2d 1839, 1846 (Fed. Cir. 1992), (Emphasis added). Additionally, the obviousness-type double patenting rejection should make clear:

- (A) **The differences** between the inventive subject matter defined by the conflicting **claims** - a claim in the patent compared to a claim in the application; and

(B) The reasons **why** a person of ordinary skill in the art would conclude that **the inventive subject matter defined in the claim at issue is anticipated by, or would have been an obvious variation of, the inventive subject matter defined in a claim in the patent.**

Thus, since the Examiner has not used the correct standard for determining a double patenting rejection, for this reason alone the current rejection should be withdrawn. See MPEP §804 (1).

Notwithstanding, Applicant respectfully believes the Examiner has not properly compared the **currently pending claims** in the above-captioned application to the **allowed claims** in Berthold, et al., and outlined: (A) **the differences** between the inventive subject matter defined by the conflicting **claims**; and (B) the reasons **why** a person of ordinary skill in the art would conclude that the inventive subject matter defined in the **currently rejected claims** are anticipated by, or would have been an obvious variation of, the inventive subject matter defined in a **claim or claims** in the cited patent. See MPEP §804 (1).

Accordingly, Applicant respectfully believes the current rejection should be withdrawn.

## **7. Double Patenting**

The Office Action states,

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being

unpatentable over claims 1-3 of copending Application No. 10/537,728. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Considering Claim 1: Application '728 teaches a polyethylene composition with multimodal molecular mass distribution which has a density in the range of from 0.920 to 0.956 at 23 °C an MFR in the range of from 1.5 to 3.5 dg/min and which comprises from 35 to 45% by weight of a low-molecular-mass ethylene homopolymer; from 34 to 44% by weight of a high-molecular-mass copolymer made from ethylene and a 1-olefin comonomer having from 4 to 8 carbon atoms; and from 18 to 26% by weight of ultrahigh-molecular-mass ethylene copolymer C containing a second 1-olefin comonomer (Claim 1).

Considering Claim 2: Application '728 teaches the first 1-olefin comonomer as being present at less than 0.1% by weight and the second 1-olefin as being present in an amount 0 to 10% by weight (claim 2).

Considering Claim 3: Application '728 teaches the 1-olefins as being 1-butene, 1-hexene, 1-pentene, 1-octene or 4-methyl-1-pentene (claim 3).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### **RESPONSE**

Applicant kindly request the Examiner to hold this rejection in abeyance since neither application has issued as a patent.

#### **CONCLUSION**

Based upon the above remarks and amendments submitted herein, the presently claimed subject matter is believed to be novel and patentably distinguishable over the prior art of record. The Examiner is therefore respectfully requested to reconsider and

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withdraw the rejections, and allow pending claims 1 and 3-5. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner if any questions or comments arise, or such action would expedite prosecution of this application.

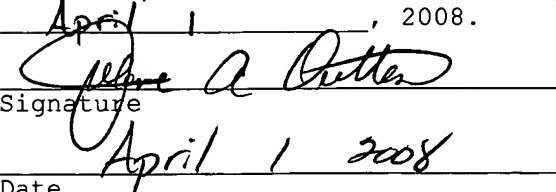
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on April 1, 2008.

  
Signature

April 1 2008  
Date